This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Previously presented) A method of producing a nanoporous carbide-derived carbon composition having a mean nanopore diameter within the range of from about 0.05 nm to about 0.2 nm of a selected value comprising:

(a) reacting a first quantity of a ~~metal or metalloid~~ carbide composition comprising SiC, TiC, ZrC, B_4C, and Mo_2C with a halogen at a first temperature in the range of from about 200°C to about 1400°C, to produce nanopores in a first quantity of carbide-derived carbon;

(b) reacting a second quantity of the ~~metal or metalloid~~ carbide composition comprising SiC, TiC, ZrC, B_4C, and Mo_2C with the halogen at a second temperature in the range of from about 200°C to about 1400°C, said second temperature differing from said first temperature by about 100°C or more, to produce nanopores in a second quantity of carbide-derived carbon, said carbide-derived carbon characterized as having a mean nanopore diameter that differs by an amount in the range of from about 0.05 nm to about 0.2 nm from the mean nanopore diameter of the first quantity;

such that the mean nanopore diameter of the second quantity of carbide-derived carbon is reproducibly produced within the range of from about 0.05 nm to about 0.2 nm of the selected value.

2. (Original) The method of claim 1 wherein the carbide is Ti_3SiC_2.

3. (Canceled).

4. (Previously presented) The method of claim 1 wherein the at least one of the first and second temperatures is in the range of from about 300°C to about 1200°C.

5. (Previously presented) The method of claim 1 wherein at least one of the first and second temperatures is in the range of from about 300°C to about 800°C.

6. (Previously presented) The method of claim 1 wherein the difference between the mean nanopore diameters of the first and second quantities of carbide-derived carbon is about 0.05 nm.

7. (Canceled)

8. (Previously presented) The method of claim 1 wherein the nanopore size distribution of the second quantity of carbide-derived carbon is substantially the same as the nanopore size distribution of the first quantity of carbide-derived carbon.

9. (Previously presented) The method of claim 1 wherein the difference between the mean pore diameter of the first and second carbide-derived carbons is about 0.1 nm.

10. (***Canceled***)

11. (Previously presented) The method of claim 1 wherein the halogen comprises chlorine.

12. (Previously presented) The method of claim 1 wherein the mean nanopore size diameter of at least one of the carbide-derived carbons is less than about 2 nm.

13. (Previously presented) The method of claim 1 wherein the mean nanopore size diameter of at least one of the carbide-derived carbons is less than about 1 nm.

14. (Previously presented) The method of claim 1 wherein the nanopore size distribution of at least one of the carbide-derived carbons has a full width at half maximum of less than about 0.5 nanometers.

15. (Previously presented) The method of claim 1, further comprising reacting at least one successive quantity of a metal or metalloid carbide composition with the halogen at a successive temperature in the range of from about 200°C to about 1400°C, said successive temperature differing from any preceding temperature to produce a nanoporous composition characterized as having a mean pore diameter that differs by an amount in the range of 0.05 nm to about 0.2 nm than the mean pore diameter of the first quantity or the second quantity.

16. (Canceled)

17. (Previously presented) The method of claim 10 wherein the metal or metalloid carbide composition comprises a binary or ternary carbide composition.

18. (Previously presented) The method of claim 1 wherein the metal or metalloid carbide composition comprises a ternary composition of silicon, titanium, and carbon.

19. (***Canceled***)

20. (Previously presented) The method of claim 1 wherein the difference between the first and second temperatures is about 100°C.